

## CLAIMS

1. A method of operating a projector, comprising:  
coupling a lamp containing a memory device onto the projector;  
transmitting information contained within the memory device to the  
5 projector; and  
displaying lamp retail sales information, included within the information,  
when lamp failure is anticipated to be near.

2. The method of claim 1, wherein anticipating lamp failure  
10 comprises:  
measuring a time of lamp operation;  
adding the measured time to previously measured time;  
recording a sum of the measured time and the previously measured  
time;  
15 estimating life expectancy of the lamp based on the sum; and  
providing an operator of the projector with information concerning life  
expectancy of the lamp when the estimated life expectancy is below a  
threshold.

3. The method of claim 1, additionally comprising:  
obtaining current firmware revision level information from the projector;  
comparing the current firmware revision level information to firmware  
information contained within the memory device; and  
where the comparing reveals that a later firmware version is available,  
25 providing an operator of the projector with information concerning availability  
of the later firmware version.

4. The method of claim 1, additionally comprising:  
obtaining product ID information from the projector;  
30 comparing the product ID information to a recall list contained within  
the memory device; and  
where a recall is indicated, providing an operator of the projector with  
information concerning the recall.

5. The method of claim 1, additionally comprising:

locating the lamp, while the lamp is still within packaging, near an install location of the lamp;

5 establishing contact between a smart card located within the packaging and the projector; and

confirming that the lamp is appropriate for installation within the projector by comparing a model designator of the lamp with a model designator of the projector.

10 6. The method of claim 1, additionally comprising:

communicating with a remote server at an address contained within the memory device;

obtaining, from the remote server, new information selected from the group comprising: firmware revision level information, product recall information, and lamp retail sales information; and

15 disclosing the new information to an operator of the projector.

7. A lamp for a projector, comprising:

a memory device;

20 a communications link allowing transfer of information between the memory device and the projector; and

wherein the memory device is configured, in response to an elapsed time of lamp operation indicating that lamp failure is near, to provide lamp retail information for communication to an operator.

25

8. The lamp of claim 7, additionally comprising:

current available firmware revision level information, contained within the memory device, for comparison to an existing projector firmware revision level; and

30 firmware update availability information, contained within the memory device, for providing to an operator of the projector, where a projector firmware update is indicated.

9. The lamp of claim 7, additionally comprising:

current product recall information, contained within the memory device,  
for comparison to an existing projector model ID.

5 10. The lamp of claim 7, wherein the memory device additionally  
comprises a smart card, comprising:

a procedure to respond to the communications link, prior to removal of  
the lamp from retail packaging, with information for cross-referencing and  
indicating lamp and projector compatibility.

10

11. The lamp of claim 7, wherein the memory device additionally  
comprises:

an address of a remote server, from which may be obtained new  
information selected from a group comprising: firmware information, product  
15 recall information, and lamp retail sales information.

12. A system, comprising:

a lamp containing a memory device;

20 a communications link for transferring information between the lamp  
and a projector; and

a procedure for providing information to an operator, wherein the  
procedure is configured to obtain an address of a remote server from the  
memory device within the lamp, and wherein the procedure is configured to  
obtain information from the server selected from a group comprising: firmware  
25 information, product recall information, and lamp retail sales information.

13. The system of claim 12, additionally comprising:

30 a user interface, to provide the information to the operator, wherein the  
user interface is configured for display on a device selected from a group  
comprising: a projector screen, a PC or a display carried by the projector.

14. The system of claim 12, additionally comprising a procedure for:  
obtaining current firmware revision level information from the projector;  
comparing the current firmware revision level information to firmware  
information contained within the memory device; and

5 where a later firmware version is available, providing an operator of the  
projector with information concerning availability of a firmware update for the  
projector.

15. The system of claim 12, additionally comprising a procedure for:  
10 obtaining product ID information from the projector;  
comparing the product ID information to a recall list contained within  
the memory device; and

where a recall is indicated, providing the operator of the projector with  
information concerning the recall.

16. The system of claim 12, additionally comprising:  
a smart card located within retail packaging of the lamp, wherein the  
smart card is configured to communicate with the projector and to confirm that  
the lamp is appropriate for installation within the projector by comparing a  
20 model designator of the lamp with a model designator of the projector.

17. The system of claim 12, additionally comprising a procedure for:  
measuring cumulative hours of lamp operation; and  
displaying retail information when the cumulative hours of lamp  
25 operation are within a threshold value of expected lamp life.

18. A system, comprising:  
a projector having a consumable component;  
a memory device, contained within the consumable component;  
30 an application having access to the memory device; and  
a user interface, updated by the application, configured to display  
information from the memory device within the consumable component.

19. The system of claim 18, wherein the application is configured to compare lamp use information with lamp life information and a threshold value and to display retail purchase information to an operator when the lamp use information is within the threshold value of the lamp life information, wherein  
5 the retail purchase information is obtained from the memory device.

20. The system of claim 18, wherein the application obtains additional information over a network using a network address obtained from the memory device.  
10

21. The system of claim 18, wherein the application is configured to compare available firmware revision information obtained from the memory device with firmware revision information from the projector.

22. The system of claim 18, wherein the memory device is configured to include projector recall information, and wherein the user interface is configured to display the projector recall information when the projector has been recalled by a vendor.  
15

23. A system, comprising:  
20 means for containing information within a lamp, wherein the lamp is configured for operation within a projector;  
means for communicating the information between the lamp and the projector, both prior to installation of the lamp and after installation of the  
25 lamp;  
means for using the information in the course of lamp installation and projector operation.

24. The system of claim 23, wherein the means for using the information comprises:

means for checking projector model type and lamp model type, prior to lamp installation;

5 means for confirming compatibility between the projector model type and the lamp model type;

means for alerting an operator where an incompatibility exists.

10 25. The system of claim 23, wherein the means for using the information comprises:

means for measuring time of lamp operation;

means for estimating life expectancy of the lamp using the measured time; and

15 means for providing an operator of the projector with information concerning the estimated life expectancy of the lamp when estimated life expectancy is below a threshold.

26. The system of claim 23, wherein the means for using the information comprises:

20 means for obtaining current firmware revision level information from the projector;

means for comparing the current firmware revision level information to firmware information contained within the means for containing information; and

25 means for providing an operator of the projector with information concerning availability of a firmware update for the projector, where the means for comparing indicates that a later firmware version is available.

27. The system of claim 23, wherein the means for using the information comprises:

means for obtaining product ID information from the projector;

5 means for comparing the product ID information to a recall list contained within the means for containing information; and

means for providing an operator of the projector with information concerning a recall, where the recall is indicated by the means for comparing.

10 28. The system of claim 23, wherein the means for using the information comprises:

means for sending a message to an address contained within the means for containing information;

15 means for obtaining, from a server at the address contained within the means for containing information, new information selected from the group comprising: firmware revision level information, product recall information and lamp retail sales information; and

means for disclosing the new information to an operator of the projector.

20 29. A lamp for a projector, comprising:

means for containing information within the lamp;

means for communicating information between the means for containing information and the projector;

means for obtaining product ID information from the projector;

25 means for comparing the product ID information to a recall list contained within the means for containing information; and

means for providing an operator of the projector with information concerning the recall, where a recall is indicated by the means for comparing.

30

30. The lamp of claim 29, additionally comprising:

means for obtaining a current firmware revision level information from the projector;

5 means for comparing the current firmware revision level information to firmware information contained within the means for containing information; and

means for providing the operator of the projector with information concerning availability of a firmware update for the projector, where a later firmware version is available.

10

31. The lamp of claim 29, additionally comprising:

means for tracking elapsed time of lamp operation; and

15 means for communicating lamp retail information to the operator when the elapsed time of lamp operation exceeds a threshold indicating likelihood of lamp failure, as established by data within the means for containing information within the lamp.

32. The lamp of claim 29, additionally comprising:

20 means for confirming that the lamp is appropriate for installation within the projector by using the means for communicating, prior to removal of the lamp from retail packaging, and by comparing a model designator of the lamp with a model designator of the projector.

25 33. The lamp of claim 29, wherein the memory device additionally comprises:

means for sending a message to an address contained within the means for containing information;

30 means for obtaining, from a server at the address contained within the means for containing information, new information selected from the group comprising: firmware revision level information, product recall information and lamp retail sales information; and

means for disclosing the new information to the operator of the projector.



34. A processor-readable medium comprising processor-executable instructions for:

establishing communication between a projector and a memory device on a lamp;

5 obtaining current firmware revision level information from the projector;  
comparing the current firmware revision level information to firmware availability information contained within the memory device; and

where a later firmware version is available, providing an operator of the projector with information concerning availability of a firmware update for the  
10 projector.

35. The processor-readable medium of claim 34, comprising further instructions for:

measuring a time of lamp operation;

15 estimating remaining life of the lamp based on the measured time; and  
providing an operator of the projector with information on the estimated remaining life of the lamp when the estimated remaining life of the lamp is below a threshold.

20 36. The processor-readable medium of claim 34, comprising further instructions for:

displaying lamp retail sales information, included within the information, when lamp failure is near in time.

25 37. The processor-readable medium of claim 34, comprising further instructions for:

obtaining product ID information from the projector;

comparing the product ID information to a recall list contained within the memory device; and

30 where a recall is indicated by the comparing, providing an operator of the projector with information concerning the recall.

38. The processor-readable medium of claim 34, comprising further instructions for:

detecting the lamp, while the lamp is still within packaging, near an install location of the lamp;

5 establishing communication between a smart card located within the packaging and the projector; and

determining if the lamp is appropriate for installation within the projector by comparing a model designator of the lamp with a model designator of the projector.

10

39. The processor-readable medium of claim 34, comprising further instructions for:

sending a message to an address contained within the memory device;

15 obtaining, from a server at the address, new information selected from the group comprising: firmware revision level information, product recall information and lamp retail sales information; and

disclosing the new information to an operator of the projector.

20 40. A processor-readable medium comprising processor-executable instructions for:

establishing communications between a memory device within a lamp and a projector;

retrieving information contained within the memory device; and

25 providing an operator of the projector with information from the memory device.

41. A processor-readable medium as recited in claim 40, comprising further instructions for:

30 checking projector model type and lamp model type prior to removal of the lamp from retail packaging;

confirming compatibility between the projector model type and the lamp model type; and

alerting an operator where an incompatibility exists.

42. A processor-readable medium as recited in claim 40, comprising further instructions for:

obtaining current firmware revision level information from the projector;  
comparing the current firmware revision level information to firmware  
5 information contained within the memory device; and

where a later firmware version is available, providing an operator of the projector with information concerning availability of a firmware update for the projector.

10 43. A processor-readable medium as recited in claim 40, comprising further instructions for:

obtaining product ID information from the projector;  
comparing the product ID information to a recall list contained within  
the memory device; and

15 where a recall is indicated, providing an operator of the projector with information concerning the recall.

44. A processor-readable medium as recited in claim 40, comprising further instructions for:

20 sending a message to an address contained within the memory device;  
obtaining, from a server at the address contained within the memory device, new information selected from the group comprising: firmware revision level information, product recall information and lamp retail sales information;  
and

25 disclosing the new information to an operator of the projector.